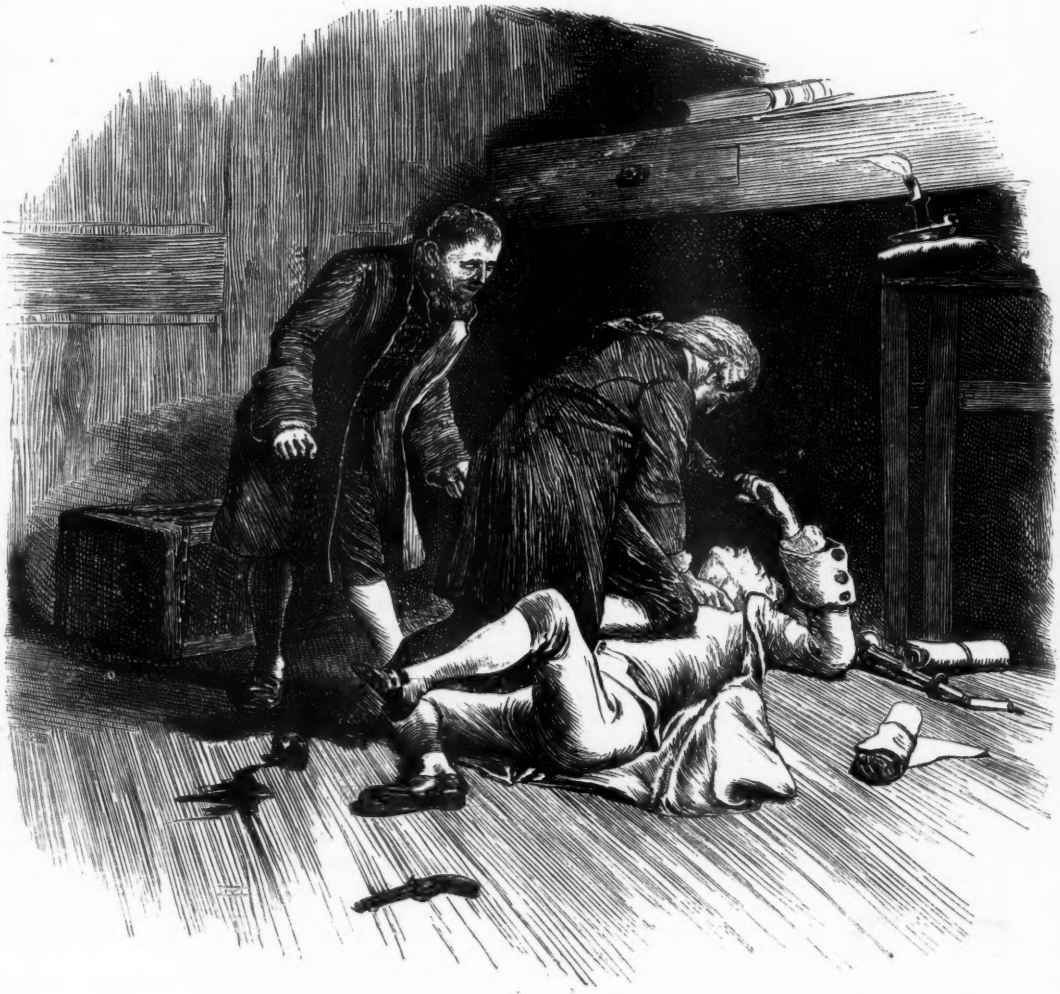
THE LEISURE HOUR.

A FAMILY JOURNAL OF INSTRUCTION AND RECREATION.

"BEHOLD IN THESE WHAT LEISURE HOURS DEMAND,—AMUSEMENT AND TRUE KNOWLEDGE HAND IN HAND."—*Cowper.*



CAPTURE OF SILAS SLEECH.

ROGER KYFFIN'S WARD.

BY W. H. G. KINGSTON.

CHAPTER XXII.—UNEXPECTED EVIDENCE.

At an early hour of the day, towards the end of June, two persons on horseback might have been seen proceeding through the New Forest. The sun, just rising, cast his rays amid the boughs of the trees, throwing long shadows over the greensward. Here and there light-footed deer, cropping the dewy grass, started as they heard the footsteps of the horses, and went bounding away farther into the depths of the forest. One of the persons was a young lady mounted on a light, active palfrey; while the other, a tall old man, bestrode a large, strong steed, well capable of bearing his weight. A brace of formidable-looking pistols were stuck in his holsters, while another pair of smaller dimensions were placed in the belt he wore round his waist. In his hand he carried a thick stick, which might have proved no bad substitute for a broadsword.

"It was indeed thoughtful of you, Paul," said the

young lady, looking round at her companion, without in any way checking the rapid speed at which she was proceeding. "I little expected to mount Beauty again, and could not have accomplished our journey so well, I am sure, on any other horse."

"Why, Miss Mabel, do you see, when we had to surrender Stanmore to Old Sleech, I thought to myself, neither he nor any of his young cubs shall ever mount the horse my dear young mistress has ridden; so as soon as it was dark one night, I trotted him off to my good friend Farmer Gilpin, and says I to the farmer, 'You take care of this horse, and let no one have him till I come and fetch him away; he's not stolen, and you need not be afraid of the halter. I will pay you for his keep when I fetch him away.' Mr. Sleech, cunning as he is, had not made a list of the horses, so did not miss Beauty; besides, she was yours, and not his, though he would have claimed her; and that's the long and short of my story, Miss Mabel."

"Thank you, thank you, indeed," answered Mabel. "Do you think Beauty will get through the journey in a couple of days?"

"I am afraid not, Miss Mabel," answered Paul. "I would advise you to sleep twice on the road, and then you will get in fresh the third day, and be able at once to go to Mr. Thornborough's. He was a friend of the colonel, I know, and from what you tell me, I am sure he will give you as much assistance as anybody."

Madam Everard, when she heard the dangerous situation in which Harry Tryon was placed, could not bring herself to refuse Mabel's wish to set off immediately to try what could be done to assist him. She, however, had advised her going at once to her godfather, Mr. Thornborough, who, being a man of influence, and possessing great knowledge of the world, was able to render her more help than Mr. Kyffin could. She had, however, wisely written to Harry's guardian, telling him what she knew, and also her purpose of going to the house of Mr. Thornborough. She was too anxious to speak much during her ride.

From the rapid rate at which she proceeded it was evident that she knew the road thoroughly, as she had never even to ask her companion which way to take. The two travellers had nearly reached the confines of the forest, when suddenly she came upon a large party of men, surrounding several light waggons. They were sitting on the ground, with bottles and provisions near them, while their horses stood tethered at green spots close at hand.

On being suddenly surprised by Mabel and old Paul, several of them started up and seized their bridles. Paul's stick was instantly raised in the air, as if about to come down on the heads of his assailants.

"Avast there, mate!" sung out one of the men, "we're not going to ill-treat you if you behave peaceably, but we want to know where you and the young lady are going."

"Oh, pray let us go!" exclaimed Mabel; "we are simply going to London on a matter of great importance, and whoever you are we cannot do you any harm."

"Well, young lady, that may be true enough," answered one of the men; "but you must just come and have a word with our captain. If he has no objection, we don't want to keep you."

"Pray let him come and see us immediately," said Mabel; "we are anxious to be liberated without delay."

The men, without heeding her request, led her horse and that of Paul a little distance on one side, where, seated on the grass, enjoying a long pipe, with a book at his elbow, and a cup of coffee before him, was a person whose appearance betokened nothing of the smuggler or brigand. As soon as he saw Mabel he started up, and inquired if he could be of any service to her. She told him of the interruption she and her attendant had received, and begged that she might be no longer detained. "Yes, sir, I say it's a great shame, and times are very bad when a young lady like Miss Everard, with her attendant, cannot ride through the forest without being stopped by a gang of smugglers."

"Miss Everard, I beg you many pardons," exclaimed the smuggler captain. "My scoundrels are unable to distinguish one person from another. If you will allow me I will accompany you some way on your road, so that I may protect you from any similar annoyances."

Saying this the captain sent for his horse, which he immediately mounted, and rode alongside Mabel through the remainder of the forest.

"I must ask your confidence, Miss Everard," he said; "I am an especial friend of your father's. Indeed, I owe my life to his courage and gallantry, and I shall be thankful of an opportunity to render you any service in my power."

"I know, sir, what you say is true," observed Paul, glancing at the stranger. "I remember your coming to Stanmore that sad night when Miss Lucy was taken ill, and I was close by when Captain Everard and you were speaking together. Are you not Captain Rochard?"

"You are right, my friend," said the stranger. "By that name Captain Everard knew me. Necessity, and not my will, compels me to associate with these people," he continued; "not for the sake of making money, but for another motive, believe me. You do not suppose that your father would allow me his friendship did he believe that I was the leader of a band of outlaws. I may some day tell you my motives of associating with these men. To your father I owe my life, and that alone would make me take an interest in you, young lady; but I may also tell you that I have another reason. We are related, although not very nearly. Your father's mother was a relation of my father. I never saw her, for she died when I was very young; indeed, I am but a few years older than your father."

"You related to us? You know then the facts of the marriage of my grandfather to my grandmother. How little did I expect to hear this. You may be of the very greatest assistance to us."

Captain Rochard assured Mabel that it would be a great satisfaction to him to be so. She then told him of the loss of the certificate, and the successful scheme which their relative Mr. Sleech had set up for obtaining possession of the property.

"For my own sake," she observed, "I care little for what has occurred; but it will be a bitter thing for my father when he returns to find that he has been deprived of the property he thought his own."

Captain Rochard was silent for some minutes; then turning to Paul, he asked suddenly,—

"Do you know in what year the colonel's brother married?"

"Yes, sir, I mind it well; it was the beginning of

the war with France, and much about the time that Frederick of Prussia opened his seven years' war, and Admiral Byng did not beat the French in the first action, and was shot in consequence. A difficult job Lieutenant Everard had, too, to bring home his young baby, and escape the French cruisers. I mind his coming home as well as if it had been yesterday, and Madam Everard taking care of the little motherless boy, that's the captain now—this young lady's father—as if he had been her own child, and the poor lieutenant going to sea, and getting shot the next year. He died as a brave officer might wish to die, on the deck of his ship, lashing the enemy's bowsprit to his own mainmast, that she might not get away—"

"But I forget dates; in what year was that?" asked Captain Rochard, interrupting the old man, who might otherwise have run on to a much further length in his recollections.

"That was in the year '56 or '57 to the best of my mind," answered Paul. "The captain 's a little above forty, and it's about that time ago."

"Thank you, my friend," said Captain Rochard; "I shall remember the dates, and will put them down by-and-by. Your grandfather, I believe," he continued, addressing Mabel, "married in the south of France, where my relatives were residing at the time. Alas! this fearful revolution has swept off many of them; but still some few, especially among the older ones, survive. The young, and strong, and healthy were the chief victims. I'll say no more. I'll do my best to aid your father, and enable him to recover his rights. I wish that he was in England at present, that I might consult with him first. I am quite willing, at all risks, to go over to France, and to endeavour to bring over the witnesses to the marriage, or the documents which may prove it."

Mabel expressed her thanks to Captain Rochard, who now inquired what business took her to London. She hesitated for some time. At last she thought, "He's true and kind, and though he may not be able to assist me, I shall have his sympathy and good wishes." She then told him frankly of the dangerous position in which Harry Tryon was placed, of course asserting her belief in his innocence.

"That fine young fellow? I know him well," said the captain. "I am sure he would not commit an unworthy action. I have more power to help him than you may suppose. Give me all the particulars with which you are acquainted, and I will try what can be done. Do you, however, proceed in your undertaking; I have great hopes that your efforts will not be without a happy result. That boy must not be put to death. I would go through anything to save him."

By this time they had reached the confines of the forest. Captain Rochard said he must go back to his companions. He bade Mabel a kind farewell, when she and Paul continued their journey towards London. Beauty seemed to understand that he was on an important journey, for never had he trotted so swiftly over the ground. Mabel knew the importance of reserving his strength too much to allow him to break into a canter, or to push him on in a gallop, though her own feelings might have prompted her to do so. It was absolutely necessary during the heat of the day to rest. A small inn appeared close to the road. Mabel threw herself down on a little sofa in the room appropriated to her, at the door of which Paul kept ward and watch till it was time again to start. The horses, well groomed and fed, were then led forth, looking almost as fresh as when they started in the morning. Thus, before nightfall a large portion of the distance to London had been accomplished.

CHAPTER XXIII.—IN MR. COPPINGER'S COUNTING-HOUSE.

Mr. Stephen Coppinger had been for some time in town, leaving his family at Lynderton. It was not a time when a mercantile man could neglect his business. There was a great deal to do, for confidence had been restored in the mercantile world after the mutiny of the fleet had been completely put down.

Silas Sleech was at his desk, and, like the rest of his companions, busily employed.

Mr. Kyffin did his best to attend to business, but his mind was greatly disturbed. He could gain no tidings of his ward. All he could learn was that he had left the ship in which he had returned to England, and had gone on board another man-of-war. Too probably she was one of the mutinous fleet. Mr. Kyffin heard of many men losing their lives in the scuffles which ensued on board the ships when the loyal part of the crew were struggling to restore the power into the hands of their officers. Too probably Harry, on one side or the other—he hoped on the loyal side—might have lost his life in one of these scuffles. He was sure otherwise that the lad would have written to him. One letter might possibly have miscarried, but he would not have gone so long without writing a second or a third time. He was instituting, in the meantime, all the inquiries in his power, but he could not hear the name of Harry Tryon on board any of the ships. He was not aware, of course, that Harry had changed his name, nor that it was a common custom with seamen in those days to do so, for various reasons. Had he known of the existence of Jacob Tuttle he might have applied to him, and he therefore had not the same means of learning about him which Mabel possessed.

On the arrival of the post one morning at Idol Lane Mr. Sleech received a letter from his "respected father." The ordinary observer would have discovered nothing in the countenance of Silas to indicate its contents. He, however, folding it up, put it in his pocket, and forthwith betook himself to the door of Mr. Coppinger's private room, at which he humbly knocked. On being admitted, he explained to his principal that he had received notice of the illness of his father and one of his sisters, and that his presence, as the eldest son of the family, would be greatly required. He therefore entreated that Mr. Coppinger would allow him to set forth without delay for Stanmore.

Mr. Coppinger was a kind-hearted man, and would on no account detain him if Mr. Kyffin could manage to have his duties performed during his absence.

Silas, thanking his principal, withdrew, and in a humble tone of voice entreated Mr. Kyffin to make the necessary arrangements. The head clerk looked hard at Silas, who, though not easily abashed, let his eyes drop before him.

"Yes; if Mr. Coppinger gives you leave, I will certainly not detain you," answered Mr. Kyffin.

Silas was in a great hurry to be off. Quickly putting the books at which he had been working in

their places, he closed his desk and hurried out of the office. Mr Kyffin looked after him.

"So great a villain never darkened that door before," he said to himself. "May it be the last time he ever passes through it!"

Under where Silas Sleech's hat and cloak had hung Mr Kyffin saw a bunch of keys. He had evidently dropped them in his hurry to leave the house.

"I am the fittest person to take charge of these," said Mr. Kyffin to himself, and he forthwith retired with them into Mr. Coppinger's room. He there held a consultation of some length; then once more entering the office, he waited till the hour of closing. The clerks were dismissed. He and Mr. Coppinger alone remained in the office. Mr. Sleech's desk was opened with one of the keys. Within was a strange assortment of articles, and among others a small iron box, with Mr. Silas Sleech's name painted outside. There were lottery tickets, and pawnbrokers' duplicates, and packs of cards—some curiously marked—and dice which had a suspicious tendency to fall with the higher numbers uppermost, and letters from dames of scarcely doubtful character.

"I have suspected as much for long," said Mr. Kyffin, "but I could not well bring the proof home. This, however, will convince you that Silas Sleech is not a trustworthy person."

"Indeed it does," exclaimed Mr. Coppinger; "but see what this strong box contains. Probably if he leaves such articles as this scattered about, without thinking it necessary to conceal them, the contents of that box are of a more damaging character."

The box was opened by one of the keys of the bunch.

"Ah!" exclaimed Mr. Kyffin, "here is a letter directed to me. It is the one I have long missed from my unfortunate young ward Harry Tryon. Excuse me, sir, while I read its contents."

Mr. Kyffin ran his eye over the letter.

"The poor lad here gives an explanation of his conduct, and his reasons for quitting London. He weakly yielded to the temptation thrown in his way by Silas Sleech, that is very evident, but in no other respect do I believe that he was criminal. However, we will look over the remainder of these papers, and I trust then we shall have the means of exonerating him still further. What do you think of these papers?" asked Mr. Kyffin, holding a sheet up to Mr. Coppinger.

On it was written over and over again the name of the firm, as signed by Mr. Coppinger himself. Evidently the writer had been endeavouring to imitate Mr. Coppinger's signature. He had done so very successfully. Indeed, another paper was found containing a signature which Mr. Coppinger declared to be genuine. It was clearly the copy for the others.

"Now I feel sure," said Mr. Kyffin, "that Silas Sleech forged that paper which he wished it to be supposed Harry had forged, while it's very possible that he may also have forged Harry's signature to some of the bills which he showed us when he endeavoured to prove Harry's guilt."

"I indeed think your account very likely to be true," said Mr. Coppinger. "I am ashamed at having allowed such a scoundrel as Mr. Sleech undoubtedly is, to have remained so long in my office undetected; yet so plausible are his manners, that had this evidence against him not been discovered, I should have been unwilling to believe him guilty."

"You will not let him escape, surely, sir," said Mr. Kyffin; "justice demands that he should be brought to trial, so that the character of your nephew may be vindicated."

The two gentlemen examined all the papers thoroughly, making notes of their contents, and then locked them carefully up in the safe in Mr. Coppinger's room. Mr. Kyffin having accompanied Mr. Coppinger to Broad Street, and supped with him, returned at night to the office, where he occasionally occupied a bedroom. He had been in bed for some time, though not asleep, thinking over Harry's affairs, when he was aroused by a knocking at the door. He heard the porter go out of his room and admit some one. It immediately struck him that it was Silas Sleech; for as the porter knew nothing of his proceedings, he would naturally, without hesitation, admit him. Rapidly dressing, therefore, he struck a light, and putting the pistol which he usually carried to and from Hampstead in his pocket, he proceeded down-stairs. The person who had come in did not go to Mr. Sleech's room; but after a few minutes' conversation entered the counting-house. Mr. Kyffin heard him wish the porter good-night, and say that he should not be long.

"Call me at an early hour, there's a good fellow, for I have to be off by times," he added.

Mr. Kyffin waited a minute, and then proceeded down-stairs into the office. A light was burning on the desk. By it he saw Mr. Sleech hunting about in all directions, evidently looking for his keys. The search was, of course, in vain. He seemed to think so, for producing a cold iron from his pocket, with as little noise as possible he wrenched open the desk. He seized the light and looked in. Dismay was depicted on his countenance. At that instant Mr. Kyffin entered the room.

"Wretched scoundrel, confess your villanies!" he exclaimed. "Was it to betray an honest youth, and to blast his character through a miserable feeling of jealousy and revenge, that you pretended to be his friend? Confess what you have done, or prepare to be given over into the hands of justice."

On hearing Mr. Kyffin's voice Silas dropped the lid of the desk, and slipping off his stool, went down on his knees, holding up his hands with a look of the most abject terror. "I did not intend to injure him, indeed I did not," he exclaimed, in a whining voice. "Oh! Mr. Kyffin, you know how long I have toiled for the house, and how our employer's interests were as dear to me as my own; then how can you accuse me of doing such things as you say I have done?"

"Don't kneel to me," answered Mr. Kyffin, sternly; "don't add additional falsehood to your other villanies. Expect no leniency from me. Of all bad characters, I hate a hypocrite the most. I will make no promise, but if you will confess in a court of justice what you have done, I may possibly endeavour to have your punishment mitigated, and no other promise can I make."

"I will do all you ask, indeed I will," answered Silas, "only don't look so fierce; don't shoot me," he exclaimed, looking at the pistol which, unconsciously, Mr. Kyffin had taken from his pocket.

"I have no intention of shooting you, but again say I will make no promises. Mr. Coppinger will decide what is to be done with the man who has robbed him, and so cruelly treated his nephew."

Saying this, Mr. Kyffin returned the pistol to his pocket. The round eyes of Silas had been watching him all the time. He now hung down his head as if ashamed to meet Mr. Kyffin's glance. His eye, however, was glancing upward all the time. Suddenly he made a spring, and rushed towards Mr. Kyffin.

"I will have my revenge," he exclaimed, grappling with him.

Mr. Kyffin, though advanced in life, was as active as ever. His muscles and nerves had never been unstrung by dissipation, as were those of Silas, who found that he had met almost his match. The young man, however, struggled desperately, as a fierce desire seized him to destroy his opponent. He felt for the pistol in his pocket. With insane satisfaction he grasped it, and was drawing it forth, with a determination of shooting the owner, when he found his arm seized, and directly afterwards he lay on the ground with the sturdy porter and Mr. Kyffin standing over him.

A CRUISE AFTER CODFISH.

BY J. KEAST LORD.

I WONDER if anybody ever heard of "Marblehead," except such as are duly initiated into all the mysteries of drying, dried, and salted codfish? I trow not. Let me begin, then, by stating that the post town of Marblehead is situated in the United States, in the county of Massachusetts, not a very long distance to the north-east of Boston, and a quaint, pretty little place it is, agreeably perched on a rocky peninsula. Unkind people, with over-sensitive noses, might be disposed to remark, satirically, upon the tarry, pitchy, boaty, and "ancient and fish-like" odours that are somewhat freely distributed throughout its streets, lanes, and alleys. But who cares for what such as they may say? A good lung-full of the salt sea breeze in the early morning purifies your blood, sends it dancing through your arteries, and creates an appetite that bodes no good to the hotel-keeper who has to provide breakfast. I have always been told that pitch and tar are wholesome, healthy smells, and I am inclined to believe it, for the only person who did badly in the town when I visited it was the doctor; but, be it remembered, I speak of many years ago. The harbour has scarce its equal, being accessible at all seasons to vessels of the largest tonnage.

The inhabitants in my day were nearly all engaged in the cod-fisheries, while over a hundred vessels started every year about the 1st of May for the banks of Newfoundland, to fish for cod and mackerel. It would be little else than waste of space to enter upon a detailed account of the many strange interviews and still stranger adventures I fell in with whilst seeking for a passage on board one of the fishing-vessels. After a great deal of bargaining, I contrived to arrange satisfactory terms, and secured a passage on board a "banker," for so these fishing-craft are designated which frequent the cod "banks." She was christened—a fact duly recorded in conspicuous letters on the stern—"Maid of the Ocean," a smart fore-and-aft rigged schooner, and was reputed the fastest craft out of Massachusetts Bay, or, as her skipper—better known as "Cap. Zach," short for Captain Zachariah Field—more nautically expressed it, "jist a kinder sort o' gal as could show her starn to any pinkey afloat."

There are two systems of fitting out these vessels. The one a family affair; the father, together with his sons and relatives, jointly taking shares, and amongst them building a vessel during the winter months. Manning her themselves, they manage to make and complete their voyage between spring and autumn, and return in time for the harvest, all the profits being then equally divided. The harvest finished, another short trip is made; the cargo, if a fortunate venture, is salted and dried for their own use during the winter, the fish so cured being usually styled "mud fish." The other mode, and the one generally adopted, is for an owner to charter a vessel to ten or twelve men on shares, the owner, who is frequently the captain, finding all nets, provisions, salt, hooks, lines, and tackle, the men paying a regular tariff for their share of each article consumed; and the profits, if any, are divided when the season ends.

It was a lovely bright May morning when we hauled away from the wharf; the flapping mainsail was soon apeak, and with a freshening breeze we shot away towards the entrance of the harbour. Captain Zach was the very ideal of a hardy fisherman, light-hearted, contented, speaking of "luck" but depending on skill, ever ready to look on the sunny side of life, and to snatch at whatever might present itself in the way of pleasure whilst pursuing his hazardous calling. Our crew consisted of twelve stout, sturdy, iron-fisted salts, full of life, and ready at any moment to indulge in a practical joke; all, to a man, good fishermen and able sailors. The cook was a negro from Guinea, nicknamed Old Ivory Black, from his shining ebon skin; his large red lips formed the boundaries to a mouth of hippopotamus-like capacity, and contrasted remarkably with two rows of white teeth, frequently displayed even to the last molar.

Seven "bankers" accompanied us, and as we passed a jutting rock (that has some supposed influence on the luck of fishermen), each man chucked a small coin into the sea as tribute towards it, thus, as he supposed, insuring good fortune. The "Maid of the Ocean," true to her reputation, "walked the waters like a thing of life." The night was dark, and the wind hauling a little ahead, raised a chopping sea; but when I came on deck in the morning, Nature seemed to smile again as sweetly as a child after having slept off a pet. The rippling waves were tinted with the rosy hue of the early sunlight, as the gay little craft glided easily on her course, her sails well filled with a fair but freshening breeze.

Making one's toilet at sea is always a difficult matter, even though it be in a commodious steamer, but in the "banker" it was reduced to the most elementary and simplest system. There was a tin bowl filled with salt water for the ablution, a towel with a surface like sand-paper to rasp yourself dry, and the finishing touches were accomplished by raking your hair into position with your fingers. Breakfast followed in due course, prepared by Old Ivory Black; not that this *chef de cuisine* exhibited any peculiar skill in artistically varying the viands, that alternated between salt pork, salter fish, the very saltest beef, and hard tack (biscuit), the whole washed down with a black pungent acrid mixture, proudly offered by the darky as "bery fine corfee, massa cappen."

We had a most enjoyable passage, but somewhat monotonous; one tires of old threadbare jokes and yarns, and wearies even of gazing day after day into the clear blue sea. There was some amusement to be

gained, it is true, by lounging over the side of the vessel to watch the curious tenants of the sea. Sluggish lump-fish, with their uncouth heads and misshapen bodies, continually wriggled slowly along with us; sun-fish, in their parti-coloured armour, floated by, performing eccentric undulations. Now, a stiff, black-looking fin cleft the water suspiciously, leaving a wake behind, as would a miniature ship, the well-known danger-signal of a greedy shark; huge leaves of kelp, wrack, and sea-tangle drifted by, rafts to myriads of crustaceans and minute forms of marine life. The rudder creaked and groaned to the music of its iron chains, clanking over the friction rollers as the brawny helmsman turned the wheel; sea birds peeped at us, then wheeled away to be seen no more, whilst ever following were the chickens of Mother Carey, dipping into, but never resting on, the ripple at the stern. Thus time rolled on, until the dense fog and chilly feeling of the air proclaimed our near approach to the banks of Newfoundland.

These great hidden banks of sand, or whatever they may be, extend north and south for about six hundred miles, and two hundred east and west. To the southward they narrow away to a point, with almost precipitous edges, that drop off suddenly into fathomless water. This appears the grand rendezvous for cod and various species of fish. There are, besides, several localities equally productive known to the fishermen: Bank Queran, the Flemish Cap, and others of like celebrity. Codfish are also found in great abundance close to the shore, and in the harbours of Cape Breton and Nova Scotia. How this immense bank came where we find it, is a question more easily asked than answered: whether, according to the skipper's theory, it was a great island, that suddenly sank from the effects of an earthquake; or whether it is an accumulation of sand and boulders brought by icebergs which are thawed in the Gulf Stream, and lodge their cargoes at this spot by meeting with currents from the north, wiser heads than mine must decide.

The cheery voice of the leadsman, as he sang out the depth, proclaimed at last the welcome news that we had reached anchoring ground, where fish were to be expected. A dense impenetrable fog hung like a pall over the water, with not a breath of wind to lift or disperse it, as the little craft rolled lazily at her anchor in the heavy swell that tumbled in from the north-east. Not a sound to break the silence, save the lip-lap of the water against the vessel's bows; no sign of fish or other living thing. The men lolled listlessly about, peering into the sea over the vessel's side, throwing in small bits of bait, indulging in a whistle, or softly chanting the refrain of some familiar song that came unbidden to the memory, and, it may be, carried back the singer to his home and all that he loved in it, be it sweetheart, wife, or children. Old Ivory Black, who was perched up in the bows on a cask, puffing away at his pipe, suddenly startled all hands by literally screaming, as he rolled off his seat, "Massa cap—massa cap, him see cod as long as bowsprit." As if by magic, listlessness vanished, and all hands were at once awakened to activity; the lines were seized, and, as the heavy sinkers plunged into the sea, each man took his place. A space of three feet and a half on the side-rail is allotted to each fisher, cleats being fastened there, over which his line runs; a similar space is also allowed him on deck to coil away his slack line as a fish is hauled in.

Cod invariably keep close to the bottom, hence from thirty to forty fathoms of line run out before the sinkers touch the ground. The line is then hauled taut, so as to free the hooks from the sand; the bait is usually salted clams, barrelled for the purpose, or squid, and capelin, if they can be caught. A junk cut from a cod's throat is also a killing bait, Sir Codfish having no personal objection to feast on a delicate part of his brother. The fishermen lean over the bulwarks, the line held lightly in the hand, waiting for the sharp tug signalling a bite; then, standing up, haul away until the struggling fish reaches the surface, when he is gaffed, if too heavy to lift on deck with a line. He is then unhooked and thrown into a square box named the kid, there to kick and flounder, whilst the fisher rapidly re-baits his hooks; then, as the line runs out, he seizes the fish, gives it a sharp crack on the head, cuts out the tongue, and throws the cod on the deck to be dressed. Each man at the end of the take reports his number of fish, which account is duly entered in a book, kept for the purpose by the skipper.

I suppose the cod must have been more than usually ravenous on this occasion, it being impossible for the men to unhook and bait sufficiently fast; fish, from fourteen to sixty pounds, were tumbled on the deck with great rapidity; each man seemed to lend all his skill and energies to outvie his neighbour in the number he could haul in. For four hours the fish continued biting without any sign of slackening; the decks were literally filled. At last the shrill cheery voice of the skipper rang out clear and sharp as a trumpet: "Cease fishing, boys—haul in the gear. Guess it's about time to split and salt."

Ready obedience was at once observed. The lines rapidly and carefully stowed away in round hampers, the operation of "dressing down" commenced.

First of all, I may state that the hands are divided into small gangs — throaters, headers, splitters, salters, and packers. Each fisherman knows how many fish he has taken by the number of tongues he has. Planks are placed on the heads of casks or tops of baskets to be used as dissecting tables. Each man does his part, and passes the fish on to his neighbour. From the splitter the fish is transferred to the salter, who needs to exercise extreme care and skill. He first rubs the salt well over each side of the fish, then places the fish in layers, back uppermost; a quantity of salt being sprinkled between each layer.

In about three weeks the fish, piled in what are called kenches, are sufficiently salt. The final curing is seldom done at sea; either a temporary driving station is selected on shore, or the vessel, when laden, returns to her port, where the fish are dried and rendered marketable. Small platforms or flakes are erected, on which the wet salted fish are laid; at the end of three days they are said to be "made," after which they are again piled away in kenches for two or three days to sweat, in other words, to dissipate all remaining moisture; three days more, and they are again placed on the flakes, and the curing is complete.

Washing decks and a general clearance was hardly effected after our fortunate take before all was dark and dismal. A dense fog continued to thicken, and the driving rain made the sails and rigging dripping wet. A long heaving swell rolled steadily in from the north-east, and we rocked most disagreeably "in the cradle of the deep." Feeling, as I leaned over the stern, anything but comfortable, my attention

was attracted to the skipper, who was vainly trying to peer into the darkness. The rain and spray from his sou'-wester and gum suit ran off in very rivulets; his face, as the binnacle light gleamed palely on it, expressed extreme anxiety. Gazing at once in the same direction, I could discern nothing, save the white foam-crests passing like ghosts under the stern. The wind had risen rapidly, and well-nigh blew a gale.

Listening intently, it seemed to me, as each gust of wind hissed and clattered through our rigging, that mingled with it was a strange splashing sound, as of some huge beast floundering and plunging in the water. Drawing near the skipper to ask him if he, too, heard this unusual noise, I was not a little frightened at seeing him dash to the companion-way, and shout, "All hands on deck!" then seizing the fog-trumpet, blow it with all his might. The danger was very soon evident—a large ship was close upon us. Straight on she came, looking like a moving mountain, her signal and cabin lights twinkling like stars, her tall masts and spars, and pyramids of canvas, towering high above us; her massive bows anon buried deeply in the foam, then rearing up on end, displayed her cutwater and burnished sheathing like an armour-plated monster. The awful suspense of that moment no time can ever efface from my memory. I could distinctly hear the creak of her masts and the sough of the sails as the wind whistled through the ropes, and I fancied I could see faces peering over her bows. Did they see us? Did they hear the trumpet? In breathless anxiety all watched her, and prepared for the coming crash. "Hard a starboard!" shouted a loud, clear voice, and the great ship coming to surged past us, and rapidly vanished into the night.

When day dawned, the wind gradually lulled and shifted to another quarter, and as the fog lifted and disappeared before the sun, we discovered several fishing-vessels anchored within a mile of us, hitherto quite hidden in the mist. Then followed weary days of interminable fogs, sudden changes of temperature, wind ahead, astern, abeam, now a ten-knot breeze, anon a dead calm. Sometimes the wind suddenly falling, in ten minutes the vessel would be completely muffled in mist, that clung like gossamer to the masts and spars. These fogs that hang continually over the banks, and hover along the shore, are occasioned, so it is said, by the warm water of the Gulf Stream meeting with the colder currents which flow down from the Polar regions, aided by the prevailing north-easterly wind.

We sailed steadily towards the north, sauntering and idling over the sea, passed very near the much-dreaded Virgin Rocks, and eventually reached Cape Broyle, a miserable desolate headland of most inhospitable aspect. High cliffs and beetling precipices frowned down upon the angry surf that washed against them; the entire coast-line, from north to south, a succession of rugged peaks, their summits lost in everlasting clouds of fog. One could easily picture the utter disgust of the adventurer who first explored its barren solitude; or that of Cabot, by whom it may be said that the land was discovered a *second* time, and called Newfoundland.

Coasting on and on without taking any fish was indeed weary work. At last, almost dispirited, Captain Zach put about, and stood back again towards our old station. We passed a well-known and favourite locality; again we fell among the cod, and for some time waged most successful war upon them. Often a huge ling, or still more unwieldy ponderous halibut, came struggling and writhing to the surface, requiring the combined efforts of two or three fishermen to get him on deck. The halibut is perhaps the strongest and most obstinate fish in the sea when hooked. Often attaining a weight of from four to six hundred pounds, it is by no means an easy matter to manage such a leviathan. Several of these grand takes nearly filled our holds, and we seriously discussed the question of return, when, drifting along, every now and then taking soundings, we came suddenly into the midst of a shoal of mackerel, and, what was more fortunate, they were in a biting humour; no time was to be lost, or they might suddenly disappear. Quite a different system of fishing is adopted for mackerel: the hooks, two in number, are separated by a stretcher, and baited with small pieces of cod; the hook being unbarbed and made of soft iron, no time is wasted in unhooking. As soon as the fish comes in sight, the skillful jerk swings it over the ship's side, and it falls on the deck freed from the hook. A heap of mackerel, as they come fresh from the sea, is a wonderful and lovely sight. The slightest alarm, the sudden appearance of a humpbacked whale, a shoal of porpoises, or a shark, and the mackerel disappear. Our catch was split and salted much in the same way as the cod, and stowed away for home.

As we ran clear of the fog, I saw for the first time an iceberg. The sun shone brightly, displaying the full splendour of its colour. Like an island of crystal it drifted majestically along, and as the bright light illuminated it, revealing all its prismatic hues, its burnished surface, and fantastic frost-work, the ideal realms of fairyland became to some extent a reality. There were grottoes, castles, mosques, minarets, palaces, and gardens, all of glass, and shining metal, and precious stones, set in gold and emerald. Then it changed into a monster fortress gleaming with countless lights, again into a marble ruin. I could have gazed for hours, it seemed "in nothing constant but continued change." It towered like a vast mountain high into the air, and rocks, boulders, and *débris* of all kinds were lodged on its craggy sides, or embedded in its substance.

It was pleasant to be once more dashing through blue water, and doubly cheering, after such a long sojourn amidst fog and soaking rains, to look again upon a clear sky. The schooner, as though conscious she was homeward-bound, lay over to the breeze, and ploughed through the waves that bounded beneath her as a "steed that knoweth its rider." All hands were joyous in the anticipation of home; happy, also, in the contemplation of the goodly profit each would receive on the division of the cargo.

Perhaps happier than any was he who records this cruise. Unless, my kind reader, you are possessed of a nose proof against highly concentrated stench; a skin that can dispense with the necessity of washing; teeth like a beaver, to chew hard tack and junk; the constitution of a seal, to bear continual wetting; ability to roost as a bird rather than sleep "like a Christian;" a stomach capable of digesting anything; the temper of an angel, and the flexibility of an acrobat,—take my advice and do not go for a cruise cod-fishing in a "banker."

SKETCHES OF THE GEOLOGICAL PERIODS AS THEY APPEAR IN 1871.

BY J. W. DAWSON, LL.D., F.R.S., PRINCIPAL OF McGILL COLLEGE, MONTREAL.

XV.—THE NEOZOIC AGES—(*Second Article*).

PLANT-LIFE in the Tertiary approaches very nearly to that of the Modern World, in so far as its leading types are concerned; but in its distribution geographically it was wonderfully different from that with which we are at present familiar. For example, in the Isle of Sheppy, at the mouth of the Thames, are beds of "London clay," full of fossil nuts; and these, instead of being hazel nuts and acorns, belong to palms allied to species now found in the Philippine Islands and Bengal, while with them are numerous cone-like fruits belonging to the Proteaceæ (banksias, silver-trees, wagenbooms, etc.), a group of trees now confined to Australia and South Africa, but which in the Northern Hemisphere had already, as stated in a previous paper, made their appearance in the Cretaceous, and were abundant in the Eocene. The state of preservation of these fruits shows that they were not drifted far, and in some beds in Hampshire, also of Eocene age, the leaves of similar plants occur along with species of fig, cinnamon, and other forms equally Australian or Indian. In America, especially in the West, there are thick and widely distributed beds of lignite or imperfect coal of the Eocene period; but the plants found in the American Eocene are more like those of the European Miocene or the Modern American flora, a fact to which we must revert immediately.

In Europe, while the Eocene plants resemble those of Australia, when we ascend into the Miocene they resemble those of America, though still retaining some of the Australian forms. In the leaf-beds of the Isle of Mull, where beds of vegetable mould and leaves were covered up with the erupted matter of a volcano belonging to a great series of such eruptions which produced the basaltic cliffs of Antrim and of Staffa, and at Bovey, in Devonshire, where Miocene plants have accumulated in many thick beds of lignite, the prevailing plants are sequoias or red-woods, vines, figs, cinnamons, etc. In the sandstones at the base of the Alps similar plants and also palms of American types occur. In the Upper Miocene beds of Oeningen in the Rhine valley, nearly five hundred species of plants have been found, and include such familiar forms as the maples, plane-trees, cypress, elm, and sweet-gum, more American, however, than European in their aspect. It thus appears that the Miocene flora of Europe resembles that of America at present, while the Eocene flora of Europe resembles that of Australia, and the Eocene flora of America, as well as the Modern, resembles the Miocene of Europe. In other words, the changes of the flora have been more rapid in Europe than in America, and probably slowest of all in Australia. The Eastern Continent has thus taken the lead in rapidity of change in the Tertiary period, and it has done so in animals as well as in plants.

The following description of the flora of Bovey is given, with slight alteration, in the words of Dr. Heer, in his memoir on that district. The woods that covered the slopes consisted mainly of a huge pine-tree (sequoia), whose figure resembled in all probability its highly admired cousin, the giant Wellingtonia of California. The leafy trees of most frequent occurrence were the cinnamon and an evergreen oak like those now seen in Mexico. The evergreen figs, the custard apples, and allies of the Cape jasmine, were rarer. The trees were festooned with vines, beside which the prickly rotang palm twined its snake-like form. In the shade of the forest throve numerous ferns, one species of which formed trees of imposing grandeur, and there were masses of underwood belonging to various species of Nyssa, like the tupelos and sour-gums of North America. This is a true picture, based on actual facts, of the vegetation of England in the Miocene age.

But all the other wonders of the Miocene flora are thrown into the shade by the discoveries of plants of this age which have recently been made in Greenland, a region now bound up in what we poetically call eternal ice, but which in the Miocene was a fair and verdant land, rejoicing in a mild climate and rich vegetation. The beds containing these specimens occur in various places in North Greenland; and the principal locality, Atane-Kerdluk, is in lat. 70 N., and at an elevation of more than a thousand feet above the sea. The plants occur abundantly in sandstone and clay beds, and the manner in which delicate leaves and fruits are preserved shows that they have not been far water-borne, a conclusion which is confirmed by the occurrence of beds of lignite of considerable thickness, and which are evidently peaty accumulations containing trunks of trees. The collections made have enabled Heer to catalogue 137 species, all of them of forms proper to temperate, or even warm regions, and mostly American in character. As many as forty-six of the species already referred to as occurring at Bovey Tracey and Oeningen occur also in the Greenland beds. Among the plants are thirty species of pines, some of them of large size; and the beeches, oaks, planes, poplars, maples, walnuts, limes, magnolias, and vines are apparently as well represented as in the warm temperate zone of America at the present day. This wonderful flora was not a merely local phenomenon, for similar plants are found in Spitzbergen in lat. 78° 56′. It is to be further observed that while the general characters of these ancient Arctic plants imply a large amount of summer heat and light, the evergreens equally imply a mild winter. Further, though animal remains are not found with these plants, it is probable that so rich a supply of vegetable food was not unutilised, and that we shall some time find that there was an Arctic fauna corresponding to the Arctic flora. How such a climate could exist in Greenland and Spitzbergen is still a mystery. It has, however, been suggested that this effect might result from the concurrence of such astronomical conditions in connection with the eccentricity of the earth's orbit as would give the greatest amount of warmth in the Northern Hemisphere with such distribution of land and water as would give the least amount of cold northern land and the most favourable arrangement of the warm surface currents of the ocean.*

Before leaving these Miocene plants, I must refer

* Croll and Lyell.

to a paragraph which Dr. Heer has thought it necessary to insert in his memoir on the Greenland flora, and which curiously illustrates the feebleness of what with some men passes for science. He says: "In conclusion, I beg to offer a few remarks on the hair, or a few cells, or a bit of epidermis not larger than a pin's head, should enable any one who understands his business to see as great differences as a merely superficial botanist would see between the flower of a ranunculus and that of a strawberry.

BRITAIN IN THE POST-PLIOCENE AGE.

Musk-sheep, Hippopotamus, Machairodus, Mammoth, Woolly Rhinoceros, Long-fronted Ox, and Irish Stag. The animals are taken from Mr. Waterhouse Hawkins's picture, "Struggles of Life among British Animals of the Antediluvian Times." London; 1850. The landscape is that of the later part of the cold Post-pliocene period.

amount of certainty in identification which the determination of fossil plants is able to afford us. We know that the flowers, fruits, and seeds, are more important as characteristics than the leaves. There are many genera of which the leaves are variable, and consequently would be likely to lead us astray if we trusted in them alone. However, many characters of the form and venation of leaves are well known to be characteristic of certain genera, and can therefore afford us characters of great value for their recognition." In a similar apologetic style he proceeds through several sentences to plead the cause of his Greenland leaves. That he should have to do so is strange, unless indeed the botany known to those for whom he writes is no more than that which a school girl learns in her few lessons in dissecting a buttercup or a daisy. It is easy for scientific triflers to exhibit collections of plants in which species of different genera and families are so similar in their leaves that a careless observer would mistake one for the other, or to get up composite leaves in part of one species, and in part of another, and yet seeming the same, and in this way to underrate the labours of painstaking observers like Heer. But it is nevertheless true that in any of these leaves not only are there good characters by which they can be recognised, but that a single breathing pore, or a single Heer himself, and the same applies to all other competent students of fossil plants, has almost invariably found his determinations from mere fragments of leaves confirmed when more characteristic parts were afterwards discovered. It is high time, in the interests of geology, that botanists should learn that constancy and correlation of parts are laws in the plant as well as in the animal, and this they can learn only by working more diligently with the microscope. I would, however, go further than this, and maintain that, in regard to some of the most important geological conclusions to be derived from fossils, even the leaves of plants are vastly more valuable than the hard parts of animals. For instance, the bones of elephants and rhinoceroses found in Greenland would not prove a warm climate; because the creatures might have been protected from cold with hair like that of the musk-sheep, and they might have had facilities for annual migrations like the bisons. The occurrence of bones of reindeer in France does not prove that its climate was like that of Lapland; but only that it was wooded, and that the animals could rove at will to the hills and to the coast. But, on the other hand, the remains of an evergreen oak in Greenland constitute absolute proof of a warm and equable climate, and the occurrence of leaves of the dwarf birch in France constitutes a proof of a cool climate worth more

than that which can be derived from the bones of millions of reindeer and musk-sheep. Still further, in all those greater and more difficult questions of geology which relate to the emergence and submergence of land areas, and to the geographical conditions of past geological periods, the evidence of plants, especially when rooted in place, is of far more value than that of animals, though it has yet been very little used.

This digression prepares the way for the question, Was the Miocene period on the whole a better age of the world than that in which we live? In some respects it was. Obviously there was in the Northern Hemisphere a vast surface of land under a mild and equable climate, and clothed with a rich and varied vegetation. Had we lived in the Miocene, we might have sat under our vine and fig-tree equally in Greenland and Spitzbergen, and in those more southern climes to which this privilege is now restricted. We might have enjoyed a great variety of rich and nutritive fruits, and, if sufficiently muscular and able to cope with the gigantic mammals of the period, we might have engaged in either the life of the hunter or that of the agriculturist under advantages which we do not now possess. On the whole, the Miocene presents to us in these respects the perfection of the Neozoic time, and its culmination in so far as the nobler forms of brute animals and of plants are concerned. Had men existed in those days, however, they should have been, in order to suit the conditions surrounding them, a race of giants; and they would probably have felt the want of many of those more modern species belonging to the flora and fauna of Europe and Western Asia on which man has so much depended for his civilisation. Some reasons have been adduced for the belief that in the Miocene and Eocene there were intervals of cold climate, but the evidence of this may be merely local and exceptional, and does not interfere with the broad characteristics of the age as sketched above.

The warm climate and rich vegetation of the Miocene extended far into the Pliocene, with characters very similar to those already stated; but as the Pliocene age went on, cold and frost settled down upon the Northern Hemisphere, and a remarkable change took place in its vegetable productions. For example, in the somewhat celebrated "forest bed" of Cromer, in Norfolk, which is regarded as Newer Pliocene, we have lost all the foreign and warm-climate plants of the Miocene, and find the familiar Scotch firs and other plants of the Modern British flora. The animals, however, retain their former types; for two species of elephant, a hippopotamus, and a rhinoceros, are found in connection with these plants. This is another evidence, in addition to those above referred to, that plants are better thermometers to indicate geological and climatal change than animals. This Pliocene refrigeration appears to have gone on increasing into the next or Post-pliocene age, and attained its maximum in the Glacial period, when, as many geologists think, our continents were, even in the temperate latitudes, covered with a sheet of ice like that which now clothes Greenland. Then occurred a very general subsidence, in which they were submerged under the waters of a cold icy sea, tenanted by marine animals now belonging to boreal and arctic regions. After this last great plunge bath, they rose to constitute the dry land of man and his contemporaries. Let us close this part of the subject with one striking illustration from Heer's memoir on Bovey Tracey. At this place, above the great series of clays and lignites containing the Miocene plants already described, is a thick covering of clay, gravel, and stones, evidently of much later date. This also contains some plants, but instead of the figs, and cinnamons, and evergreen oaks, they are the little dwarf birch of Scandinavia and the Highland hills, and three willows, one of them the little Arctic and Alpine creeping willow. Thus we have in the South of England a transition in the course of the Pliocene period, from a climate much milder than that of Modern England to one almost Arctic in its character.

Our next topic for consideration is one of the most vexed questions among geologists, the Glacial period which immediately preceded the Advent of Man. In treating of this it will be safest first to sketch the actual appearances which present themselves, and then to draw such pictures as we can of the conditions which they represent. The most recent and superficial covering of the earth's crust is usually composed of rock material more or less ground up and weathered. This may, with reference to its geological character and origin, be considered as of three kinds. It may be merely the rock weathered and decomposed to a certain extent *in situ*; or it may be alluvial matter carried or deposited by existing streams or tides or by the rains; or lastly, it may be material evidencing the operation of causes not now in action. This last constitutes what has been called drift or diluvial detritus, and is that with which we have now to do. Such drift then is very widely distributed on our continents in the higher latitudes. In the Northern Hemisphere it extends from the Arctic regions to about 50° of north latitude in Europe, and as low as 40° in North America; and it occurs south of similar parallels in the Southern Hemisphere. Farther towards the equator than the latitudes indicated, we do not find the proper drift deposits, but merely weathered rocks or alluvia, or old sea bottoms raised up. This limitation of the drift at the very outset gives it the character of a deposit in some way connected with the Polar cold. Besides this, the general transport of stones and other material in the Northern regions has been to the south; hence in the Northern Hemisphere this deposit may be called the *Northern* Drift.

If now we take a typical locality of this formation, such, for instance, as we may find in Scotland, or Scandinavia, or Canada, we shall find it to consist of three members, as follows:—

3. Superficial Sands or Gravels.
2. Stratified Clays.
1. Till or Boulder Clay.

This arrangement may locally be more complicated, or it may be deficient in one of its members. The boulder clay may, for example, be underlaid by stratified sand or gravel, or even by peaty deposits. It may be intermixed with layers of clay or sand; the stratified clay or the boulder clay may be absent or may be uncovered by any upper member. Still we may take the typical series as above stated, and inquire as to its characters and teaching.

The lower member, or boulder clay, is a very remarkable kind of deposit, consisting of a paste which may graduate from tough clay to loose sand, and which holds large angular and rounded stones or boulders confusedly intermixed; these stones may be either from the rocks found in the immediate

vicinity of their present position, or at great distances. This mass is usually destitute of any lamination or subordinate stratification, whence it is often called *Unstratified* Drift, and is of very variable thickness, often occurring in very thick beds in valleys, and being comparatively thin or absent on intervening hills. Further, if we examine the stones contained in the boulder clay we shall find that they are often scratched and striated and grooved; and when we remove the clay from the rock surfaces on which it rests, we find these in like manner scratched and grooved and polished. These phenomena, viz., of polished and striated rocks and stones, are similar to those produced by those great sliding masses of ice, the glaciers of Alpine regions, which in a small way and in narrow and elevated valleys act on the rocks and stones in this manner, though they cannot form deposits precisely analogous to the boulder clay, owing to the wasting away of much of the finer material by the torrents, and the heaping of the coarser detritus in ridges and piles. Further, we have in Greenland a continental mass, with all its valleys thus filled with slowly-moving ice, and from this there drift off immense ice-islands, which continue at least the mud-and-stone-depositing process, and possibly also the grinding process, over the sea bottom. So far all geologists are agreed; but here they diverge into two schools. One of these, that of the Glacier theorists, holds that the boulder clay is the product of land-ice; and this requires the supposition that at the time when it was deposited the whole of our continents north of 40° or 50° was in the condition of Greenland at present. This is, however, a hypothesis so inconvenient, not to say improbable, that many hesitate to accept it, and prefer to believe that in the so-called Glacial period the land was submerged, and that icebergs then as now drifted from the north in obedience to the Arctic currents, and produced the effects observed. It would be tedious to go into all the arguments of the advocates of glaciers and icebergs, and I shall not attempt this, more especially as the only way to decide the question is to observe carefully the facts in every particular locality, and inquire as to the conclusions fairly deducible. With the view of aiding such a solution, however, I may state a few general principles applicable to the appearances observed. We may then suppose that boulder clay may be formed in three ways. (1) It may be deposited on land, as what is called the bottom moraine of a land glacier. (2) It may be deposited in the sea when such a glacier ends on the coast. (3) It may be deposited by the melting or grounding on muddy bottoms of the iceberg masses floated off from the end of such a glacier. It is altogether likely, from the observations recently made in Greenland, that in that country such a deposit is being formed in all these ways. In like manner, the ancient boulder clay may have been formed in one or more of these ways in any given locality where it occurs, though it may be difficult in many instances to indicate the precise mode. There are, however, certain criteria which may be applied to the determination of its origin, and I may state a few of these, which are the results of my own experience. (1) Where the boulder clay contains marine shells, or rounded stones which if exposed to the air would have been cracked to pieces, decomposed, or oxidized, it must have been formed under water. Where the conditions are the reverse of these, it may have been formed on the land. (2) When the striations and transport of materials do not conform to the levels of the country, and take that direction, usually N.E. and S.W., which the Arctic current would take if the country were submerged, the probability is that it was deposited in the sea. Where, however, the striation and transport take the course of existing valleys, more especially in hilly regions, the contrary may be inferred. (3) Where most of the material, more especially the large stones, has been carried to great distances from its original site, especially over plains or up slopes, it has probably been sea-borne. Where it is mostly local, local ice-action may be inferred. Other criteria may be stated, but these are sufficient for our present purpose. Their application in every special case I do not presume to make; but I am convinced that when applied to those regions in Eastern America with which I am familiar, they necessitate the conclusion that in the period of extreme refrigeration, the greater part of the land was under water, and such hills and mountains as remained were little Greenlands, covered with ice and sending down glaciers to the sea. In hilly and broken regions, therefore, and especially at considerable elevations, we find indications of *glacier* action; on the great plains, on the contrary, the indications are those of *marine* glaciation and transport. This last statement I believe applies to the mountains and plains of Europe and Asia as well as of America.

This view requires not only the supposition of great refrigeration, but of a great subsidence of the land in the temperate latitudes, with large residual islands and hills in the Arctic regions. That such subsidence actually occurred is proved not only by the frequent occurrence of marine shells in the boulder clay itself, but also by the occurrence of the stratified marine clays filled with shells, often of deep-water species, immediately over that deposit. Further, the shells and also occasional land plants found in these beds indicate a cold climate and much cold fresh water pouring into the sea from melting ice and snow. In Canada these marine clays have been traced up to elevations of 600 feet, and in Great Britain deposits of this kind occur on one of the mountains of Wales at the height of 1,300 feet above the level of the sea. Nor is it to be supposed that this level marks the extreme height of the Post-pliocene waters, for drift material not explicable by glaciers, and evidences of marine erosion, occur at still higher levels, and it is natural that on high and exposed points fewer remains of fossiliferous beds should be left than in plains and valleys.

At the present day the coasts of Britain and other parts of Western Europe enjoy an exceptionally warm temperature, owing to the warm currents of the Atlantic being thrown on them, and the warm and moist Atlantic air flowing over them, under the influence of the prevailing westerly winds. These advantages are not possessed by the eastern coast of North America, nor by some deep channels in the sea, along which the cold northern currents flow under the warmer water. Hence these last-mentioned localities are inhabited by boreal shells much farther south than such species extend on the coasts and banks of Great Britain. In the Glacial period this exceptional advantage was lost, and while the American seas, as judged by their marine animals, were somewhat colder than at present, the British seas were proportionally much more cooled down. No doubt, however, there were warmer and colder

areas, determined by depth and prevailing currents, and as these changed their position in elevation and subsidence of the land, alternations and even mixtures of the inhabitants of cold and warm water resulted, which have often been very puzzling to geologists.

I have taken the series of drift deposits seen in Britain and in Canada as typical, and the previous discussion has had reference to them. But it would be unfair not to inform the reader that this succession of deposits after all belongs to the margins of our continents rather than to their great central areas. This is the case at least in North America, where in the region of the great lakes the oldest glaciated surfaces are overlaid by thick beds of stratified clay, without marine fossils, and often without either stones or boulders, though these sometimes occur, especially toward the north. The clay, however, contains drifted fragments of coniferous trees. Above this clay are sand and gravel, and the principal deposit of travelled stones and boulders rests on these. I cannot affirm that a similar succession occurs on the great inland plains of Europe and Asia; but I think it probable that to some extent it does. The explanation of this inland drift by the advocates of a great continental glacier is as follows: (1) In the Pliocene period the continents were higher than at present, and many deep valleys, since filled up, were cut in them. (2) In the Post-pliocene these elevated continents became covered with ice, by the movement of which the valleys were deepened and the surfaces striated. This ice-period was followed by a depression and submergence, in which the clays were deposited, filling up old channels and much changing the levels of the land. Lastly, as the land rose again from this submergence, sand and gravel were deposited, and boulders scattered over the surface by floating ice.

The advocates of floating ice as distinguished from a continental glacier, merely dispense with the latter, and affirm that the striation under the clay, as well as that connected with the later boulders, is the effect of floating bergs. The occurrence of so much drift wood in the clay favours their view, as it is more likely that there would be islands clothed with trees in the sea, than that these should exist immediately after the country had been mantled in ice. The want of marine shells is a difficulty in either view, but may be accounted for by the rapid deposition of the clay and the slow spreading of marine animals over a submerged continent under unfavourable conditions of climate.

In any case the reader will please observe that theorists must account for both the interior and marginal forms of these deposits. Let us tabulate the facts and the mode of accounting for them.

FACTS OBSERVED.		THEORETICAL VIEWS.	
Inland Plains.	Marginal Areas.	Glacier Theories.	Floating-Ice Theories.
Terraces.	Terraces and Raised Beaches.	Emergence of Modern Land,*	
Travelled Boulders and Glaciated Stones and Rocks. Stratified Sand and Gravel.	Sand and Gravel, with Sea Shells and Boulders.	Shallow Seas and Floating Ice.	
Stratified Clay with Drift Wood, and a few Stones and Boulders. Striated Rocks.	Stratified Clay with Sea Shells. Boulder Clay with or without Sea Shells. Striated Rocks.	Deep Sea and Floating Ice.	
		Submergence of the land. Great continental mantle of Ice.	Much floating Ice and local Glaciers. Submergence of Pliocene Land.
Old channels, indicating a higher level of the land.	Old channels, etc., indicating previous dry land.	Erosion by continental Glacier.	Erosion by atmospheric agencies and accumulation of decomposed rock.

This table will suffice at least to reduce the great glacier controversy to its narrowest limits, when we have added the one further consideration that glaciers are the parents of icebergs, and that the question is not of one or the other exclusively, but of the relative predominance of the one or the other in certain given times and places. Both theories admit a great Post-pliocene subsidence. The abettors of glaciers can urge the elevation of the surface, the supposed powers of glaciers as eroding agents, and the transport of boulders. Those whose theoretical views lean to floating ice, believe that they can equally account for these phenomena, and can urge in support of their theory the occurrence of drift wood in the inland clay, and of sea shells in the marginal clay and boulder clay, and the atmospheric decomposition of rock in the Pliocene period, as a source of the material of the clays, while to similar causes they can attribute the erosion of the deep valleys piled with the Post-pliocene deposits. They can also maintain that the general direction of striation and drift implies the action of sea currents, while they appeal to local glaciers to account for special cases of glaciated rocks at the higher levels.

How long our continental plateaus remained under the icy seas of the Glacial period we do not know. Relating to human chronology, it was no doubt a long time; but short in comparison with those older subsidences in which the great Palæozoic limestones were produced. At length, however, the change came. Slowly and gradually, or by intermittent lifts, the land rose; and as it did so, shallow-water sands and gravels were deposited on the surface of the deep-sea clays, and the sides of the hills were cut into inland cliffs and terraces, marking the stages of recession of the waters. At length, when the process was complete, our present continents stood forth in

* The phenomena of this period, with reference to rainfall, melting snows, and valley deposits, must be noticed in our next and concluding paper.

their existing proportions ready for the occupancy of man.

The picture which these changes present to the imagination is one of the most extraordinary in all geological history. We have been familiar with the idea of worlds drowned in water, and the primeval incandescent earth shows us the possibility of our globe being melted with fervent heat; but here we have a world apparently frozen out—destroyed by cold, or doubly destroyed by ice and water. Let us endeavour to realise this revolution, as it may have occurred in any of the temperate regions of the Northern Hemisphere, thickly peopled with the magnificent animals that had come down from the grand old Miocene time. Gradually the warm and equable temperature gives place to cold winters and chilly wet summers. The more tender animals die out, and the less hardy plants begin to be winter-killed, or to fail to perfect their fruits. As the forests are thus decimated, other and hardier species replace those which disappear. The animals which have had to confine themselves to sheltered spots, or which have perished through cold or want of food, are replaced by others migrating from the mountains, or from colder regions. Some, perhaps, in the course of generations, become dwarfed in stature, and covered with more shaggy fur. Permanent snow at length appears upon the hill-tops, and glaciers plough their way downward, devastating the forests, encroaching on the fertile plains, and at length reaching the heads of the bays and fiords. While snow and ice are thus encroaching from above, the land is subsiding, and the sea is advancing upon it, while great icebergs drifting on the coasts still further reduce the temperature. Torrents and avalanches from the hills carry mud and gravel over the plains. Peat bogs accumulate in the hollows. Glaciers heap up confused masses of moraine, and the advancing sea piles up stones and shingle to be imbedded in mud on its further advance, while boreal marine animals invade the now submerged plains. At length the ice and water meet everywhere, or leave only a few green strips where hardy Arctic plants still survive, and a few well-clad animals manage to protract their existence. Perhaps even these are overwhelmed, and the curtain of the Glacial winter falls over the fair scenery of the Pliocene. In every locality thus invaded by an apparently perpetual winter, some species of land animals must have perished. Others may have migrated to more genial climes, others under depauperated and hardy varietal forms may have continued successfully to struggle for existence. The general result must have been greatly to diminish the nobler forms of life, and to encourage only those fitted for the most rigorous climates and least productive soils.

Could we have visited the world in this dreary period, and have witnessed the decadence and death of that brilliant and magnificent flora and fauna which we have traced upward from the Eocene, we might well have despaired of the earth's destinies, and have fancied it the sport of some malignant demon; or have supposed that in the contest between the powers of destruction and those of renovation the former had finally gained the victory. We must observe, however, that the suffering in such a process is less than we might suppose. So long as animals could exist, they would continue to enjoy life. The conditions unfavourable to them would be equally or more so to their natural enemies. Only the last survivors would meet with what might be regarded as a tragical end. As one description of animal became extinct, another was prepared to occupy its room. If elephants and rhinoceroses perished from the land, countless herds of walruses and seals took their places. If gay insects died and disappeared, shell-fishes and sea-stars were their successors.

Thus in nature there is life even in death, and constant enjoyment even when old systems are passing away. But could we have survived the Glacial period, we should have seen a reason for its apparently wholesale destruction. Out of that chaos came at length an Eden; and just as the Permian prepared the way for the Mesozoic, so the glaciers and icebergs of the Post-pliocene were the ploughshare of God preparing the earth for the time when, with a flora and fauna more beautiful and useful, if less magnificent than that of the Tertiary, it became as the garden of the Lord, fitted for the reception of his image and likeness, immortal and intelligent Man. We need not, however, with one modern school of philosophy, regard man himself as but a descendant of Miocene apes, scourged into reason and humanity by the struggle for existence in the Glacial period. We may be content to consider him as a son of God, and to study in our last and concluding paper that renewal of the Post-pliocene world which preceded and heralded his advent.

In the meantime, our illustration, borrowed in part from a magnificent representation of the Post-pliocene fauna of England, by the great restorer of extinct animals, Mr. Waterhouse Hawkins, may serve to give some idea of the grand and massive forms of animal life which, even in the higher latitudes, survived the Post-pliocene cold, and only decayed and disappeared under that amelioration of physical conditions which marks the introduction of the human period.

WHAT'S THE NEWS?

To answer this question an immense machinery, animate and inanimate, is every day set in motion. Ships sail on every sea; travellers penetrate into every land; men go into voluntary exile as it were; the printing-press works by day and night; and armies of pressmen, and printers, and reporters exist. It is the great aim of every journal to get hold of important information, and to publish it before any other journal.

Many are the ways in which news can be communicated. Previous to the Indian Mutiny the authorities were puzzled by finding that the village policemen were speeding from Cawnpore through the villages and towns of the peninsula, distributing on their way a chupatty (a small unleavened cake, about the size of a gingerbread nut, and similar in composition to the ordinary food of the poorer classes). Undoubtedly in this way intelligence was communicated to the natives of the rebellion that was about to be begun. Scotchmen remember in connection with this subject the old Fire Cross of the Highland clans; and every schoolboy knows how, at the lovely close of a warm summer day, the news was brought to Plymouth that the Armada was on its way; and how, as Macaulay wrote—

"From Eddystone to Berwick Bounds, from Lynn to Milford Bay,
That time of slumber was as bright and busy as the day;

For swift to east and swift to west the ghastly war-flame spread,
High on St. Michael's Mount it shone—it shone on Beachy Head."

The farther back we ascend, equally manifest is the ingenuity displayed in conveying intelligence. People who had no printing-press and no penny post were often kept in the profoundest ignorance of what was passing, and were thankful to gain news as they could. During our great war with the first Napoleon all kinds of stratagems were resorted to in order to gain intelligence. One illustration will suffice. Immediately after the battle of Waterloo, the Duke of Wellington despatched a messenger to Louis XVIII, then at Ghent, with the welcome intelligence, and it was thus that the news reached England. Louis and his little Court happened to be assembled at breakfast in a room whose windows down to the ground were wide open. The embraces and ejaculations of all the party of course instantly apprised those under the windows of the arrival of good news. Amongst these was a spy of the house of Rothschild, who had been many days on the watch. Immediately he rushed off to Ostend, and finding there a small trading vessel about to sail for England, he embarked and got here a tide in advance of the official bearer of Wellington's despatches. It is said that Rothschild, after he had reaped a harvest on the Stock Exchange, communicated the intelligence to the Earl of Liverpool, who, however, waited till he had received fuller and more authenticated details.

Perhaps in our day the Turfites, next to the Stock-jobbers, are the men who are most anxious to procure early intelligence, and pay most heavily for it. The late Lord George Bentinck realised this fact in a very unpleasant manner. The tale is not told by Mr. Disraeli, but it is authentic nevertheless. On one occasion, while at Goodwood, his lordship had appointed an early hour in the morning for a trial of one or two horses on the Downs. The coast was clear: no obnoxious tout was to be seen. As he swept the horizon with his telescope, the only living creature visible was a poor deaf old woman, employed in the harmless occupation of gathering mushrooms, to whom his lordship tossed five shillings for the contents of her basket, at the same time warning her to keep out of the way, or she might be ridden over. Quite satisfied with the trial, his lordship proceeded to Chichester to back his horse, which had been down very low in the scale. To his intense astonishment he found that the horse in question had risen considerably. His next step was to despatch a messenger to London, to make bets, feeling assured that he should realise at the least ten thousand pounds by the event. At Tattersall's, as at Chichester, his lordship found himself forestalled. Much to his astonishment and vexation the news had got abroad. At first his lordship suspected treason, gradually, however, the truth dawned upon him. It was found that the old woman gathering mushrooms was a tout in disguise who had watched the trial, and who had two stable lads waiting within a mile to convey the intelligence to London and Chichester. Occasionally, it seems, the touts have recourse to disguises of a still more objectionable character. In the life of the Duke of Richmond it is stated, that in 1860, previous to the race for the Derby, a man was discovered watching the trial of the horses in the garb of a minister, professedly employed in the distribution of tracts.

In the search after news the cleverest men are often grossly deceived. Fouché, Duke of Otranto, informed Louis XVIII how he had contrived to know all that had passed under his roof while living at Hartwell, Buckinghamshire. Fouché's confusion was, as the reader may imagine, immense when the King informed him that the letters which had been regularly written from Hartwell, giving an account of the doings of the family, were written at the King's dictation.

In our light literature there is no character better known than that of Paul Pry. He was no production of the brain, but a real *bonâ fide* man, known to the wits and fools of his day as Tom Hill. It was said of him that if he stood at Charing Cross at noonday he would tell the name and business of everybody that passed Northumberland House. He was a sort of walking chronicle of London some seventy or eighty years ago. In the memoirs of the Rev. Mr. Barham we find that we owe to Mr. Hill the existence of the sea-serpent. Every morning he was in the habit of calling in at the green-room of Drury Lane, for the purpose of popping the question I have placed at the head of this article; and when it appeared that the intelligence thus gleaned found its way into the columns of the next issue of the "Morning Chronicle," the treasurer determined that he would hoax Mr. Hill to his heart's content. Accordingly, the sea-serpent was invented, whose head was discovered in one part of the Atlantic, while his tail was met with some hundred miles away.

As a rule, collecting news is now a methodical business. Every now and then, however, something occurs which shows, methodical and easy as it seems, the business is one which can soon be put out of joint, much to the inconvenience of a nation itself. This was illustrated in the late Franco-German war. The French were terribly put to it how to get their news. With the German invader everywhere present on their sacred soil, master of their fortresses, occupying their cities, surrounding Paris itself with a triple wall of iron, how were the newspapers to obtain their information; how was the Government to gain intelligence; how were friends and families to communicate with each other? We should have said, how were the trade and commerce of the country to be carried on? were it not, alas! too true, that when war scourges a land, the industry of the artisan, the pursuits of the agriculturist, the avocations of the merchant and the manufacturer cease. Railways were occupied by the enemy: the electric wires were under his control. What was to be done? Well, there was the air; water and land communication being cut off—why not try the air? Balloons straightway appeared in the clouds—high above the range of the German guns, laden with passengers and letters. There were other means also to be utilised. There was the carrier pigeon—why not employ it? But very light must be the weight attached to the wing of a carrier pigeon, and, as our readers know, French ingenuity mastered this difficulty in a surprising manner. There was the photographic apparatus, and the messages were so successfully reduced that actually in the beginning of the year an advertisement appeared in the "Times" to this effect: "Thirty thousand private messages have arrived by your pigeons in good state." A page of any daily paper reduced on the same system would occupy not more than a square inch. When these messages got into Paris, they were magnified and copied off.

It is to the electric telegraph that in these days we are indebted for the instantaneous receipt of news from all quarters of the globe. It is within the memory of the present generation how the system sprang up. In March, 1836, Mr. (now Sir F.) Cooke, while engaged at Heidelberg in scientific pursuits, witnessed for the first time one of those well-known experiments in electricity considered as a possible means of communicating intelligence which have been tried and exhibited from time to time during many years by various philosophers. The earliest record of the idea that the magnetic needle might be the means of telegraphic communication bears the date of 1665. In 1747 Sir William Watson passed electricity through 9,000 feet of earth and water across the Thames, and through 10,000 feet of wire suspended upon poles on Shooters Hill; but in 1836 railways were extending themselves through Great Britain, and Mr. Cooke, struck with the vast importance of a mode of instantaneous communication to them, and impressed with the experiments he had witnessed, immediately directed his attention to the adaptation of electricity to a practical system of telegraphy. In 1836 he came to England to perfect his plans and instruments. In 1837 he formed a kind of partnership with Professor Wheatstone, who had for several years devoted much attention to the subject. Mr. Cooke first laid down the line to Drayton, and then extended it to Slough. Some of us can remember the sensation when the birth of the Princess Royal was announced from Windsor by the telegraph; when, by the aid of the same telegraph, Tawell was captured in the heart of the City; when, in a similar manner, the great Iron Duke's forgotten court dress was obtained from Apsley House in time for the Royal dinner party in the Windsor Banquet Hall. But the final triumph of the electric telegraph was yet to take place. That came shortly after, when, on the occasion of her Majesty opening Parliament in person, Mr. Cooke, surrounded by a crowd of the Portsmouth authorities, seated himself at the telegraphic instrument in the Gosport railway station, and read aloud the Royal Speech as it was telegraphed from London, while two printers at his elbow set it up in type. Armed with copies of the speech thus printed, he hurried up by the next train to London, and penetrated the sanctuaries of the editors of the morning newspapers. Seeing is believing. After that there was no room for scepticism. In 1858 telegraphy had so far advanced that the Old World was connected with the New by its means. The first perfect message received was sent from the directors in London to the directors in America, and was as follows:—"Glory to God in the highest; on earth, peace and good-will to men."

Before this grand triumph, M. Reuter, a German Jew, had established himself on the Continent, where telegraphic communication was being carried, as a collector and transmitter of news. In time he moved to England, and made London his head-quarters. Originally he obtained his popularity by offering his intelligence gratis; hence the reader always observed a small line indicating that the intelligence had been conveyed by Reuter's Telegrams. Having thus got the press and the public to rely on him, henceforth his work was easier. The telegraph became essential. Sometimes enormous expenses were incurred in order that one paper might monopolise the wire, and thus secure a priority of intelligence. On one occasion, while waiting for a Presidential Message, the manager of a morning journal is said to have kept the operators at work telegraphing a whole volume twice over. Expense was not regarded, and his journal forestalled all others by at least twenty-four hours.

Of course, this mode of conveying news has quite altered the conditions of the press. London has no priority of news. A paper in Dublin or Belfast, or Edinburgh, will have the same telegraphic intelligence as that published in the London dailies, and now that the postal telegraphs have come into operation, there is hardly a country newspaper of any position and respectability but has its own news sent from London by special telegram. Last February, when the Queen opened Parliament in person, the speech was transmitted by postal telegraph to nearly two hundred towns in the United Kingdom. It was, as my readers are aware, an unusually long speech. It contained 1,780 words; that is more than double the number of words contained in the speech of 1870. The transmission to Brighton was completed in forty-three minutes and a half; to Southampton, in forty-five. The operators in these two cases were females, and it is believed that they attained the highest speed, that of forty words per minute, ever gained on the particular instrument they employed. As an experiment, the speech was transmitted to Liverpool by the Hughes Type-Printing Instrument, which prints its messages in ordinary Roman type. The speed attained was between thirty-five and thirty-six words per minute, and as in working this instrument abbreviations are not used, the speed may be considered fully equal, if not superior, to the Morse, in which abbreviations are used. For the transmission to all the principal towns in the country the Wheatstone Automatic Transmittor was employed. Messages by this instrument are punched out on a separate instrument, the punched ribbon being afterwards passed through the transmittor. By the employment of additional punchers at one end, and additional writers out at the other end, the preparation and writing out of the message are made to keep pace with the transmission. The speed attained varied with the length and quality of the wires employed. The highest speed was at Bradford, to which place the speech was sent at the rate of ninety-six words per minute. The speech was read by a quarter past two. It was on sale, printed, at Newcastle, at a quarter to four; in Dublin, two minutes later; in Glasgow, at ten minutes to four; in Cork, at four; in Jersey, with two transmissions, at four; in Darlington, with two transmissions, at two minutes past four; in Dundee, with two transmissions, at twenty minutes to five; and in the Isle of Man, with two transmissions, at five. Such are the wonders of the telegraph.

In London two companies of reporters exist for the collection and transmission of news. They supply the country newspapers. If there is a meeting at the Mansion House, for instance, on any important subject, a report of it will appear in the next day's paper in Manchester or Leeds. The reporter uses paper prepared for the purpose, which will make one writing do for several copies. These copies are sent off by the evening mail. Then, again, the country agents of these associations often in the same manner supply London editors with intelligence.

But there is another way of collecting news. I am in Belfast, for instance. I walk into the handsome subscription news room, which is one of the chief institutions of that prosperous town. There are yesterday's papers, but I want later news. Of course,

that day's local papers will give me the morning's telegrams; but I want to know what the "Daily News" says, what the "Telegraph" thinks, what the "Times" utters. I go to the stands, and there I see the gist of that morning's papers epitomised, and copied out on flimsy. I am thus on an equality with the Londoners, perhaps before the majority of them. I have learnt the principal conclusions of their papers of that morning. The Press Association has had its members early at work: they have read through the leaders as soon as the papers for which they were written have appeared, and they have sent off by telegram the epitome, which tells me all I want to know. Similar summaries are to be found in the chief business resorts of all the great towns. In London the evening news, or the proceedings in parliament, are thus epitomised for various places of public resort.

Occasionally the telegraph plays curious tricks. Sometimes a thunderstorm interferes with the wires; sometimes the operator himself blunders. This is often the case when the telegram is in a language which he does not understand. Sometimes the sender of the message is himself in fault, as was the case with poor Benedetti just at the time of the rupture between France and Prussia. One of the messages he had to transmit was utterly unintelligible at Paris. Operators on the Stock Exchange are often victimised in this way, especially those who indulge in mining speculations. These mines usually rejoice in sadly out-of-the-way names, and there are great difficulties often occasioned by them. At one mine, perhaps, lead or gold has been discovered, and the shares jump up; and then next day down they drop, when it becomes clear that the telegram was a mistake and that it was at some other mine that there had been a lucky find. A little while ago, a Dublin merchant tailor was much annoyed at being requested to send patterns of his corn. However, he guessed that cloth was meant, and subsequently it appeared that he was right. One of our latest writers in America tells us that when he was at Savannah he took up a local journal of some consideration, and was astonished at reading in the telegraphic summary as follows:—"In the House of Lords, last night, the Earl of Mayo deplored the Fenian executions as sanctimonious murder." It was not for some time that he was undeceived. Happily, however, the truth came out, and it appeared that what the Earl did say, and that what the telegram ought to have said, was, "In the House of Lords, the Earl of Mayo deplored the Fenian processions as sanctioning murder."

It is wonderful what may be accomplished by means of the electric telegraph. The writer once dined at Willis's Rooms, and while we were dining we saw the operators at work sending messages to Paris, to New York, to Canada, and indeed to all parts of the world, and receiving messages in return. Life to us has, in consequence, become very different to what it was to our forefathers, who, shut up in their country houses, heard rarely anything new, and who prayed for George III long after he had ceased to reign. The isolation of the past will be an utter impossibility in the future, when all the world will be one great whispering gallery, when thought shall circulate with the speed of lightning from one nation to another, and from pole to pole. A wag will often ask you how you were to-morrow. If we go ahead as we have done of late, seriously the talk of the future will be puzzling as to "true time."

Varieties.

MARTINMAS.—Martinmas, the winter term in Scotland when farms are entered, servants engaged for the winter half-year, and when the books are balanced, was formerly a quarterly term in England, but it has long since given place to Michaelmas. In the olden time the killing of oxen and salting of beef at this season was universal, not only in England, but throughout the whole of Northern Europe. The term "mart," or "mairt," a fat beeve, familiar in Scotland and the North of England, is derived from the practice of Martinmas slaughtering. Tusser alludes to it thus in his "Husbandry":—

> "When Easter comes, who knows not than
> That veal and bacon is the man;
> And Martinmas beef doth bear good tack,
> When country folks do dainties lack."

FLASHING THE NEWS.—Here is a man sitting in a darkened room at Heart's Content. The ocean cable terminates here. A fine wire attached thereto is made to surround two small cores of soft iron. As the electric wave, produced by a few pieces of copper and zinc at Valentia, passes through the wire, these cores become magnetic enough to move the slightest object. A looking-glass, half an inch in diameter, is fixed on a bar of iron one-tenth of an inch square, and half an inch long. On this tiny glass a lamp is made to glare so that its light is reflected on a tablet on the wall. The language of the cable is denoted by the shifting of this reflected light from side to side. Letter by letter is thus expressed in this fitting idiom in utter silence on the wall. There is no record made by the machine except as the patient watcher calls out to a comrade the translated flashes as they come, and which he records. It seems a miracle of patience. There is something of awe creeps over us as we see the evidence of a human touch 3,000 miles away swaying that line of light by such a delicate process as this.—*American Paper.*

EMIGRATION TO THE UNITED STATES.—Of the 196,075 emigrants in 1870, 19,935 were married men, 24,144 married women, 73,112 single men, 34,144 single women, 16,735 boys between 1 and 12, 14,762 girls of same ages, 4,797 male and 4,079 female infants, 2,742 males and 1,536 females not distinguished as to age: 68,935 were English and Welsh, 16,640 Scotch, 67,891 Irish, 38,281 foreigners, and 4,328 not distinguished. By far the largest number, 137,321, embarked from Liverpool; from London 3,574; from Glasgow 16,862; from Cork 30,227; from Londonderry 8,091.

PRIDE BEFORE A FALL.—A portion of the speech of M. Rouher, President of the French Senate, on the eve of the Prussian war, is worth preserving among the incidents of this great chapter of European history. The speech was delivered before the Emperor Napoleon, at St. Cloud. "Sire,—The Senate thanks your Majesty for permitting it to lay at the foot of the Throne the expression of the patriotic sentiments with which it has received the communications made to it in yesterday's sitting. A monarchical combination injurious to the prestige and security of France had been mysteriously favoured by the King of Prussia. It is true that, on our protest, Prince Leopold withdrew his acceptance; Spain, which recognises and returns those friendly feelings which we entertain for her, gave up a candidature which was offensive to us. It is true that the immediate danger was got rid of, but did not our legitimate ground of complaint subsist in its entirety? Was it not evident that a foreign Power, for the increase of its own influence and dominion, and to the detriment of our honour and interests, had determined to trouble once more the equilibrium of Europe? Had we not a right to demand guarantees from that Power against the possible recurrence of a similar attempt? Those guarantees were refused, and the dignity of France was slighted. Your Majesty draws the sword; the country is with you, quivering with indignation and haughtiness. The extravagances of an ambition over-excited by one day's good fortune were sure, sooner or later, to burst out. Your Majesty, not yielding to hasty impatience, animated with that calm perseverance which constitutes real strength, has known how to wait; but, during the last four years, you have carried the armaments of our soldiers to the very highest perfection, and have raised to its utmost strength the organisation of our military forces. Thanks to your care, Sire, France is ready; and by her enthusiasm proves that, like yourself, she was resolved not to tolerate any rash enterprise."